Preliminary Comments on ALSTOM drawings.

Drawing No. GD70107/2000-8100 1of 2

The INV/CONV door panel is only acceptable on this channel. Drive D delta channel. All others are to have hinged doors with lockable handles.

Submit details of the water connection. Cabinet height cannot exceed 92" as there are overhead obstructions at 94".

Verify the lifting angle matches the shipping splits.

NEMA 1 GASKETED construction

Provide a detail drawing of the bus connections for the high voltage power cable connections. Elevations incorrect see Westinghouse drawing and pictures.

Provide drawings of the contactor and verify ratings and load break

Provide sheet 3 of 3.

Is there a support channel under the cabinets? Show on side view.

Verify light color selection is in accordance with the contract. The indication light standard is Red – on or running, Green – off, White is alarm or trip, and Amber is start permissive. See marked light colors. Reference contract page F3-9. Verify indicating lights are LED type and large diameter.

Submit seismic information and mounting details, approved by a registered profession structural engineer

Provide cabinet layout drawings showing major components and terminal blocks.

Fill in title block

Drawing No. GD70107/2000-8100 2of 2

The INV/CONV cabinets shall be provided with hinged doors with lockable handle and electrical interlocks.

Comments the same as sheet 1 of 2 except for the first one.

Drawing No.2001-101

The transformers and reactors should be dashed, furnished by others.

Verify the rating of the reactors

Show output contactors

Show fully redundant exciter

Supply nameplate information

Correct motor information, the motor is 7415 HP at 954RPM at 63.6 Hz

What is the 627 equivalent amps? The drive rating?

The shaft encoder is not required, discuss.

Match drive components with syncdrive single line diagram in the bid proposal

Note 4 should be 6900 volt customer supply

Drawing. No. 2001- 002

Explain dashed line on supply and machine surge circuit. Supplied by ALSTOM

Correct ground resistor indication

The output of the drive goes to the contactor not the motor

For the cables to the VSD transformer and output contactor match labels on Drawing No. GD70107/2000-8100 i.e. U,V,W, and MT1,MT2,MT3

Explain the "Z" symbol around the cable conductors (shown on several drawings)

Drawing. No. 2001-003

Verify this is a typical drawing for each channel.

Submit reference drawings listed MN/H4294 and MA/H6225

Drawing No. 2001-004

Verify this is a typical drawing for each channel.

Explain redundancy, it looks like only 2 power modules with N-1. How is there redundancy?

Drawing No. 2001-005

Verify this is a typical drawing for each channel.
Explain interconnect redundancy, here it only indicates one power module

Drawing No. 2001-007
Verify this is a typical drawing for each channel.
Where is the analog monitor located?
What does the dark arrow mechanical interlock indicate?

Drawing No. 2001-007A
Verify this is a typical drawing for each channel.
Verify the speed reference is scaleable from 90 to 1050 RPM
All analogs should be 4-20 ma.
The contract requires 5 additional analog inputs, 10 additional digital inputs and 5 additional analog outputs in addition to those required by the existing drive. Please confirm they will be furnished.

Drawing No. 2001-008
Verify this is a typical drawing for each channel.
Provide a write up of operation and logic diagrams.
Discuss the rotor position sensors.

Drawing No. 2001-008A
Verify this is a typical drawing for each channel.

Drawing No. 2001-008B
Verify this is a typical drawing for each channel.

Drawing No. 2001-009
Verify this is a typical drawing for each channel.
The drawing shows exciter input fuses. Are they necessary? If so why?
The cross reference sheet 12A/B should be channel 2, and 12C/D should be channel 1.

Drawing No. 2001-010
Verify this is a typical drawing for each channel.
The UPS supply was 2KVA in the proposal, 4.3 KVA is not acceptable.
The 480 V feed to the cooling pumps will be for one pump, IPSC will supply a second feed for the second pump.
Verify the 100 amp breaker on the main of the 480V system. The exciter indicates 90 amps alone. Cross reference at E-15 should be 1038 &1039, verify.
At U-6 cross reference is 12, submit sheet 12.

Drawing No. 2001-011
Verify this is a typical drawing for each channel.
Cross reference at H – 8 is to sheet 12 submit sheet 12.

Verify heater indicating lights (Red) are being furnished.

Drawing No. 2001-012A
The delta channel is channel 2 and the Y channel is channel 1.
Added cable numbers to the drawing.
Cable 2CCEK2128B18 to the Modicon is missing the neutral and the 52 breaker contact.
The 480 V. terminal block should be in cabinet 1. Terminals 1,2 & 3 require a 4/0 AWG cable and 4,5 & 6 require a #2 AWG cable, all others require #12.
The 120 V. terminal block should be in cabinet 6. The terminals require a #12 AWG cable.
TB2 terminal 3&4 show heater contacts, when they close it will short out the 120 Volts.
TB3 should be in cabinet 1.
Where is ENC SUPPLY and ENC? Cable?

Drawing No. 2001-012B
The delta channel is channel 2 and the Y channel is channel 1.
Added cable numbers to the drawing.
The jumpers need to be verified.

Drawing No. 2001-101,102, 104,105 and 106 are all for the cooling system.
IPSC will furnish a second feed for the second cooling pump in each channel.
What is the customer connection to the heat exchanger?
The outside temperature should be 50° C.
Verify input is a 50-50 water-glycol mix.
Is this an open system, it has a drain, to where? The transformers are below this.

GENERAL COMMENTS

- ALSTOM to furnish a letter detailing training (Quote) with added time for generic LCI training. This was due 10/20/03.
- We discussed having a conference call every two weeks, would like to start these.
- ALSTOM to verify indicating lights are being furnished for the contactor. Submit drawings.